

REMARKS

This application has been carefully reviewed in light of the Office Action mailed November 17, 2003. Claims 1-28 are pending in the Application. Applicant respectfully requests reconsideration and favorable action of all pending claims in view of the following remarks.

Rejections Under 35 U.S.C. § 102

The Office Action rejects Claims 1-28 under 35 U.S.C. § 102(b) as being anticipated over U.S. Pat. No. 6,262,848 to Anderson, et al ("*Anderson*"). Applicant respectfully traverses these rejections.¹ Claim 1 recites "wherein at least one dimension of the visual image is larger than the magnifying element can use to present an image at one of the viewing locations," but the '848 does not show this limitation. Rather, the '848 Patent explicitly states repeatedly that the apparatus of that patent allows the operator to view the "entire visual image in HUD . . . in eye box 32."² Thus, because the entire visual image is displayed to the operator, the '848 Patent clearly does not involve a case where at least one dimension of the visual image is larger than the magnifying element can use to present an image at one of the viewing locations. For at least this reason, Claim 1 and the claims depicting the term are allowable. For analogous reasons, independent Claims 11, 18, and 28 are allowable, as are the claims depending therefrom. Reconsideration and favorable action are requested.

Because the '848 Patent so clearly fails to teach the claimed limitations, but nevertheless the claims were rejected, Applicant presumes that the Examiner must have misunderstood the description of embodiments of the invention and therefore certain portions are described here. At page 11, lines 6-page 12 lines 14, a discussion of Figures 2A-2C of the specification is provided demonstrating that the visual image represented by arrow 52 has at least one dimension that is larger than the optical element 62 can use to present an image at

¹ Applicant notes that U.S. Pat. No. 6,262,848 issued within a year of the filing date of the instant application and thus does not qualify as art under 35 U.S.C. § 102(b). Applicant addresses this rejection assuming the Examiner intended to identify the '848 patent as a reference under 102(a) or 102(e).

² See Column 3, lines 16-17 ("Operator 30 can view with **entire visual image** in HUD 63 when his eyes are within an eyebox 32;" Column 3, lines 58 ("Again, the **entire visual image** in HUD 63 is viewable by operator 30 anywhere in eyebox 32."); Column 4, lines 28-30 ("Thus, operator 30 can view the **entire visual image** in HUD 63 at numerous points in eyebox 32").

the various views locating 70a, 70b, and 70c. These portions of the specification are reproduced here for the convenience of the Examiner, with the associated figures attached.

As can be seen in FIGURE 2A, the sizing, spacing, and/or arrangement of image source 50 and optical element 62 allow the vertical dimension, represented by arrow 52, of the visual image generated by image source 50, and hence virtual image 80, to be larger than the image that optical element 62 can present at viewing location 70b. In effect, therefore, optical element 62 becomes the field stop for the system.

Accordingly, the vertical FOV, represented by arrow 68, that can be observed by operator 30 at viewing location 70b is smaller than the total vertical FOV, represented by arrow 82, produced by the combination of optical element 62 and image source 50. As operator 30 adjusts her eye position to different viewing locations, however, other portions of virtual image 80 become observable.

For example, if operator 30 adjusts eye position from viewing location 70b to viewing location 70a, as illustrated in FIGURE 2B, the lower portion of virtual image 80 becomes observable. Thus, operator 30 may view the lower portion of an object observed at viewing location 70b and/or view an object that was not observable at viewing location 70b by adjusting eye position to viewing location 70a. Note that while the instantaneous vertical FOV 68 at viewing location 70a is slightly larger than the instantaneous vertical FOV 68 at viewing location 70b, this will not necessarily be true for all viewing locations in the operator's eye ellipse 74.

As another example, if operator 30 adjusts eye position from viewing location 70b to viewing location 70c, as illustrated in FIGURE 2C, the upper part of virtual image 80 becomes observable. Thus, operator 30 may observe the upper portion of an object observed at viewing location 70b and/or observe an object that was not observable at viewing location 70b. Note again, that the instantaneous vertical FOV 68 at viewing location 70c is slightly larger than the instantaneous vertical FOV 68 at viewing location 70b.

Further, at page 13, lines 18-29, virtual image 80 is described with reference to the image that can be presented at one viewing location by optical element 62, as reproduced below (Figure 3 attached):

FIGURE 3 also assists in demonstrating other technical features of these embodiments. As can be seen, because virtual image 80 is larger than the image that optical element 62 can use to present an image at one viewing location, the border

between the visual image and the actual scene around optical element 62 is reduced. Thus, at least some distracting features of the border effect are lessened, at least for certain viewing locations. Additionally, distortions and/or aberrations caused by imperfections at the edge of optical element 62 may be smoothed by having the image extend beyond the edge.

With the above summary of portions of the specification, it should be clear that the assertions in the Office Action that the above-described missing claim limitations are shown in the '848 Patent are incorrect. In particular, the Office Action relies primarily on column 3, lines 32-46 of the '848 Patent to teach the above-described missing limitation³, but this is clearly incorrect. That portion of the '848 Patent provides no disclosure of at least one dimension of the visual image being larger than the magnifying element can use to present an image at one of the viewing locations, as is clearly demonstrated by reproduction of that portion here.

FIG. 2 provides a side view of system 10 for providing HUD 63 for operator 30 of vehicle 20. As in FIG. 1, system 10 includes collection device 50 coupled to image source 60 in dashboard 22 by communication link 54. System 10 also includes one or more optical elements 69 in an optical path 36. Optical path 36 is defined by light rays 64 that propagate from image source 60 to the eyes of operator 30. As illustrated, each light ray 64 represents the center point of the visual image, but in reality, there are a large number of light rays 64 for each point of the visual image. Note, optical path 36 can change orientations as it encounters each optical element 69. Optical elements 69 can include lenses, beam combiners, beam splitters, or any other type of light manipulating or processing device.

Nor does the ancillary portions of the '848 Patent used to attempt to teach various additional limitations cure this defect. For example, Column 4, lines 57-60 of the '848 Patent generally states that a greater field of view can be displayed with the system of that patent than with other systems, but this clearly does not teach the above-described missing limitation.

For at least these reasons, all claims are allowable. Reconsideration and favorable action

³ The Office Action states at page 2 " . . . wherein at least one dimension of the visual image is larger than the magnifying element (69) can use to present an image at one of the viewing locations (column 3, lines 32-46); wherein the dimension comprises the vertical (column 4, lines 60-62); wherein the vertical field-of-view of the vertical image is at least one degree larger than the vertical field-of-view at the viewing location (column 4, lines 57-60)"

CONCLUSION

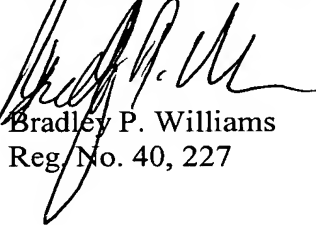
Applicant has now made an earnest attempt to place this case in condition for immediate allowance. For the foregoing reasons and for other apparent reasons, Applicant respectfully requests allowance of all pending claims.

If the Examiner feels that prosecution of the present Application may be advanced in any way by a telephone conference, the Examiner is invited to contact the undersigned attorney at 214-953-6447.

Applicants do not believe that any fees are due. The Commissioner is hereby authorized to charge these fees and any extra fee or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.
Attorneys for Applicant



Bradley P. Williams
Reg. No. 40, 227

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Correspondence Address:
2001 Ross Avenue, Suite 600
Dallas, Texas 75201-2980
Phone: (214) 953-6447

Customer Number: **05073**